

[illegible]

FIG. 1-1

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AAGCCCTGATGGGGGGCCCTGCTTCTCCGGTGGGGCAGAGGACCCGGTGCTGCTGGCAGATGTGCCACGGAGGCCCCCAGCTGCCCTCCGA
GCCAGGCCTGCAGCACTGAAAGACGACCTGCCATGTCCCATGGATCACCGCTTCCGTGCATCTTGCCCCCTGGTCCCTGCCCATTTCCAGGGCACT
CCTTACCCCTGCTGCCCTGAGCCAAAGCCCTTCACGGACCTCCCTAGCCTCCTAAGCAAAGGTAGAGCTGCCTTTTAAACCTAGGTCTTACCAGGG
TTTTTACTGTTTGGTTGAGGCACCCAGTCAACTCCTAGATTCAAAAACCTTTTCTAATTGGAGTAATGSCGGGCACCTTTCACCAAGATGTT
CTAGAAACTTCTAGCCAGGAGTGAATGGCCCTTCCCTTAGTAGCCTGGGGATGTCCAGAGACTAGGCCCTCTCCCCCTTTACCCCTCCAGAGAAGGG
GCTTCCCTGTCCCGGAGGACACGGGAACGGGATTTTCCGTCTCCTCCTTGCCAGCTCTGTGAGTCTGGCCAGGCGGTAGGAGCGTGGAG
GGCATCTGTCTGCCATCGCCCGCTGCCAATCTAAGCCAGTCTCACTGTGAACACACGAAACCTCAACTGGGGAGTGAGGGCTGGCCAGGTCTG
GAGGGCCCTCAGGGGTGCCCGAGCCCGGACCCAGCGCTTTCGCCCCCTCGTCCACCCACCCCTGGCTGGCAGCCTCCCTCCCCACACCCGCCCTGT
GCTCTGCTGTGGAGGCCACGTGGATGTTTCATGAGATGCAATCTCTCTGTTGTTGGATGGGATGGTGGCAAGCCCCAGGATCTGGCTTTGC
CAGAGGTTGCAACATGTTGAGAGAACCCGGTCAATAAAGTGTAACCTCTTACCCCTAAAAAATAAAAAAAAAAAAAA

AGGATGC Translation initiation motif
ATC Translation initiation codon
TGA Translation termination codon
AATAAA Polyadenylation signal

The nucleotide sequences of the ESTs R25718 and F06569 are in brackets and underlined, respectively.

FIG. 1-2

ABCB9 amino acid sequence

MRLWKAVVVTLAFMSVDICVTTAIYVFSLDRSLLEDIRHFNIFDSVLDLWAACLYRSCLLLGATIGVAKNSALGPRRLRASWLIVITLVCLFVGIY
AMVKLLLFSEVRRPIRDPWFALFVWTYISLGASFLWLLSTVRPGTQALEPGAATEAEGFPGSGRPPPEQASGATLQKLLSYTKPDVAFIVAAS
FFLIVAALGETFLPYYTGRAIDGIVIQKSMQDFSTAVVIVCLLAIGSSFAAGIRGGIFTLLIFARLNIRLNCLFRSLVSQETSFDDENRTGDLISR
LTSDDTMVSDLVSQNINVFLRNTVKVTGVVFMFSLSWQLSLVTFMGFPIIMMVSNIYKYYKRLSKEVQNALARASNTAEETISAMKTVRSFANE
EEEEAEVYLRKLQQVYKLNKREAAAYMYVWVGSLTLLVVQVSILYYGGHLVISGQMTSGNLIAFIIEFVLGDCMESVGSVYSGLMQGVGAAEKVF
EFIDRQPTMVHDGSLAPDHLEGRVDFENVTFYTRPHTQVLQNVSFSLSPGKVTAALVGPSSGKSSCVNILENFYPLEGGRVLLDGKPI SAYDHK
YLHRVISLVSQEPVLFARSITDNI SYGLPTVPFEMVVEAAQKANAHGFIMELQDGYSTETGEKGAQLSGGQKQORVAMARALVRNPPVLILDEATSA
LDAESEYLIQQAIGHNLQKHTVLIIAHRSLSTVEHAHLIVVLDKGRVVQQGTHQQLLAQGGLYAKLVQRQMLGLQPAADFTAGHNEPVANGSHKA

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| | |
|-------------------------|---------------------------|
| <u>GPSGSGKSS</u> | Walker A |
| <u>LSGGQKQORVAMA</u> | ABC transporter signature |
| <u>RALVRNPPVLILDEAT</u> | Walker B |

FIG. 2

| Accession | Protein | Sequence | Length |
|-----------|------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------|
| ABC89 | Mouse TAP1 | 83 WLVTITLVCFLVGIYAMWKL... 83 WLVTITLVCFLVGIYAMWKL... 101 AALGLALPGLALFRELISW... 77 AALSALPGLALFRELAAWGT... 78 AALGLALPGLASFRLKSAW... 67 LPLCLATPLTVSLRALVAG... 67 PLLCLATPLFSLRALVGGT... 67 PLLCLTNPLFSLRALVGST... | 180 176 179 155 156 144 143 144 |
| ABC89 | Rat TAP1 | 83 WLVTITLVCFLVGIYAMWKL... 83 WLVTITLVCFLVGIYAMWKL... 101 AALGLALPGLALFRELISW... 77 AALSALPGLALFRELAAWGT... 78 AALGLALPGLASFRLKSAW... 67 LPLCLATPLTVSLRALVAG... 67 PLLCLATPLFSLRALVGGT... 67 PLLCLTNPLFSLRALVGST... | 180 176 179 155 156 144 143 144 |
| ABC89 | Human TAP1 | 83 WLVTITLVCFLVGIYAMWKL... 83 WLVTITLVCFLVGIYAMWKL... 101 AALGLALPGLALFRELISW... 77 AALSALPGLALFRELAAWGT... 78 AALGLALPGLASFRLKSAW... 67 LPLCLATPLTVSLRALVAG... 67 PLLCLATPLFSLRALVGGT... 67 PLLCLTNPLFSLRALVGST... | 180 176 179 155 156 144 143 144 |
| ABC89 | Mouse TAP2 | 83 WLVTITLVCFLVGIYAMWKL... 83 WLVTITLVCFLVGIYAMWKL... 101 AALGLALPGLALFRELISW... 77 AALSALPGLALFRELAAWGT... 78 AALGLALPGLASFRLKSAW... 67 LPLCLATPLTVSLRALVAG... 67 PLLCLATPLFSLRALVGGT... 67 PLLCLTNPLFSLRALVGST... | 180 176 179 155 156 144 143 144 |
| ABC89 | Rat TAP2 | 83 WLVTITLVCFLVGIYAMWKL... 83 WLVTITLVCFLVGIYAMWKL... 101 AALGLALPGLALFRELISW... 77 AALSALPGLALFRELAAWGT... 78 AALGLALPGLASFRLKSAW... 67 LPLCLATPLTVSLRALVAG... 67 PLLCLATPLFSLRALVGGT... 67 PLLCLTNPLFSLRALVGST... | 180 176 179 155 156 144 143 144 |
| ABC89 | Human TAP2 | 83 WLVTITLVCFLVGIYAMWKL... 83 WLVTITLVCFLVGIYAMWKL... 101 AALGLALPGLALFRELISW... 77 AALSALPGLALFRELAAWGT... 78 AALGLALPGLASFRLKSAW... 67 LPLCLATPLTVSLRALVAG... 67 PLLCLATPLFSLRALVGGT... 67 PLLCLTNPLFSLRALVGST... | 180 176 179 155 156 144 143 144 |

FIG. 3-1

FIG. 3-2

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Phenogram of some ABC transporter proteins

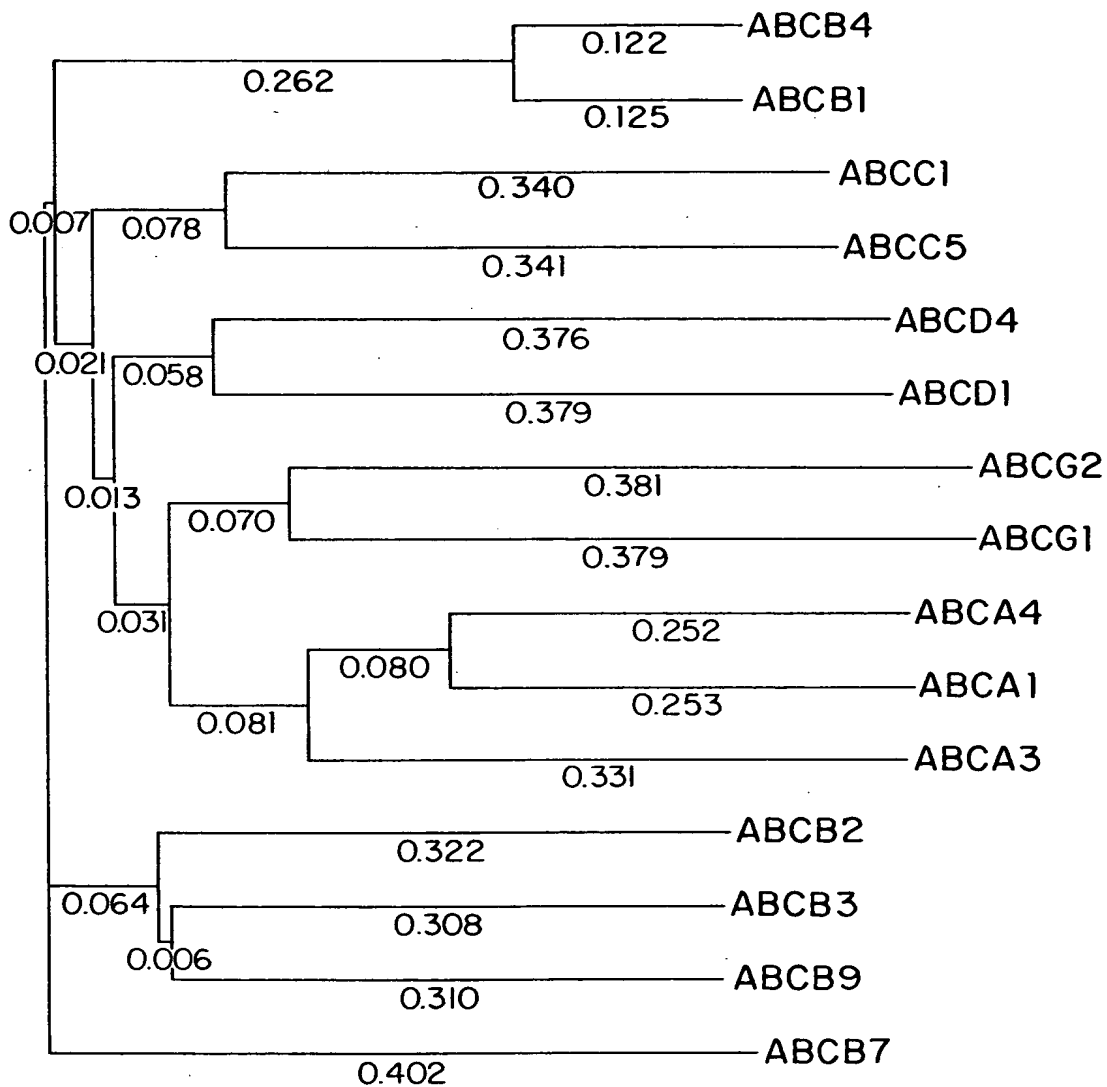


FIG. 4

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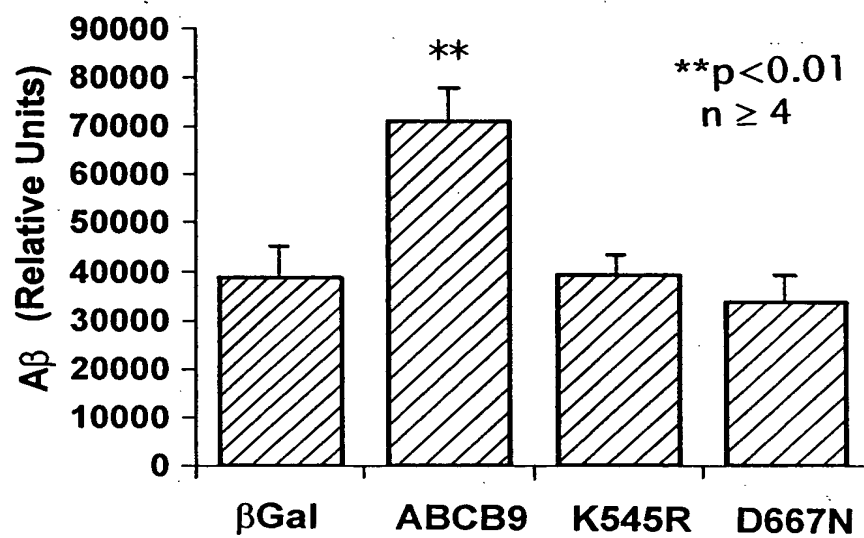


FIG. 5